

Listing of the Claims

1. (original) A process for forming an amorphous TiOPc/TiOFPC pigment mixture containing a low concentration of TiOFPC, said process comprising:
subjecting a mixture comprising phthalonitrile and titanium tetrachloride to reaction conditions effective to form lightly chlorine-substituted crude crystalline Cl-TiOPc;

combining said lightly chlorine-substituted crude crystalline Cl-TiOPc with crude crystalline TiOFPC in a weight ratio from about 70:30 Cl-TiOPc:TiOFPC to about 99.5:0.5 Cl-TiOPc:TiOFPC to form a crude crystalline pigment mixture; and
treating said crude crystalline pigment mixture under conditions effective to form a substantially amorphous pigment mixture of Cl-TiOPc and TiOFPC.

2. (original) The process of claim 1 wherein said weight ratio is from about 90:10 Cl-TiOPc:TiOFPC to about 98:2 Cl-TiOPc:TiOFPC.

3. (original) The process of claim 1 wherein said Cl-TiOPc contains about 0.5 wt.% to about 2.0 wt.% chlorine.

4. (original) The process of claim 3 wherein said Cl-TiOPc contains about 0.8 wt.% to about 1.5 wt.% chlorine.

5. (original) The process of claim 1 wherein said reaction conditions comprise varying the molar ratio of titanium tetrachloride to phthalonitrile.

6. (original) The process of claim 5 wherein said molar ratio of titanium tetrachloride to phthalonitrile is about 0.25:1 to about 1:1.

7. (original) The process of claim 6 wherein said molar ratio of titanium tetrachloride to phthalonitrile is about 0.25:1 to about 0.5:1.

8. (original) The process of claim 1 wherein said reaction conditions comprise heating said mixture to a temperature of about 150°C to about 250°C.

9. (original) The process of claim 8 wherein said reaction conditions comprise heating said mixture to a temperature of about 195°C to about 215°C.

10. (currently amended) The process of claim 1 wherein said mixture comprising phthalonitrile and titanium tetrachloride further comprises an organic solvent.

11. (original) The process of claim 10 wherein said organic solvent. is a chlorinated organic solvent.

12. (original) The process of claim 11 wherein said chlorinated organic solvent is 1-chloronaphthalene.

13. (original) The process of claim 1 wherein said conditions effective to form said substantially amorphous pigment mixture comprises dry milling.

14. (original) The process of claim 13 wherein said dry milling is carried out using a roll mill or a ball mill.

15. (original) The process of claim 14 wherein said dry milling is carried out using a particulate milling aid.

16. (original) The process of claim 15 wherein said particulate milling aid comprises steel beads.

17. (currently amended) A process for forming a nanoparticulate cocrystalline TiOPc/TiOFPC pigment composition containing a low concentration of TiOFPC, said process comprising:

subjecting a mixture comprising phthalonitrile and titanium tetrachloride to reaction conditions effective to form lightly chlorine-substituted crude crystalline Cl-TiOPc;

combining said lightly chlorine-substituted crude crystalline Cl-TiOPc with crude crystalline TiOFPC in a weight ratio from about 70:30 Cl-TiOPc:TiOFPC to about 99.5:0.5 Cl-TiOPc:TiOFPC to form a crude crystalline pigment mixture;

treating said crude crystalline pigment mixture under conditions effective to form a substantially amorphous pigment mixture of Cl-TiOPc and TiOFPC;

forming a slurry in an organic solvent of ~~the~~ said substantially amorphous pigment mixture of Cl-TiOPc and TiOFPC ~~of claim 1~~; and
wet milling said slurry, thereby forming a nanoparticulate cocrystalline composition containing a low concentration of TiOFPC.

18. (original) The process of claim 17 wherein said organic solvent is dichloromethane.

19. (original) The process of claim 17 wherein said wet milling is carried out using a particulate milling aid.

20. (original) The process of claim 19 wherein said particulate milling aid comprises steel beads.

21. (original) The process of claim 17 wherein said nanoparticulate cocrystalline composition contains Cl-TiOPc and TiOFPC in a weight ratio of from about 90:10 Cl-TiOPc:TiOFPC to about 98:2 Cl-TiOPc:TiOFPC.

22. (original) The process of claim 17 wherein said Cl-TiOPc in said nanoparticulate cocrystalline composition contains about 0.5 wt.% to about 2.0 wt.% chlorine.

23. (original) An electrophotographic element that includes a charge generation layer comprising a nanoparticulate cocrystalline TiOPc/TiOFPC pigment composition formed by the process of claim 17.